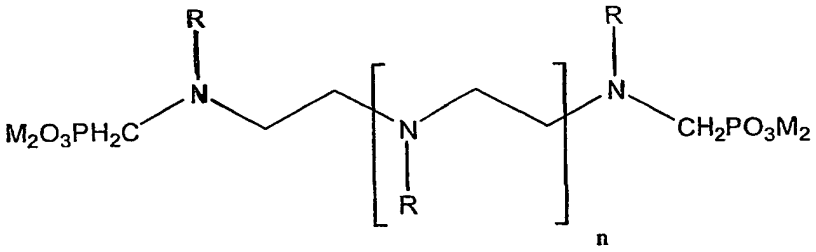
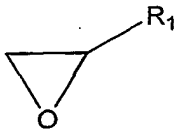
CLAIMS

1) Polyaminomethylenephosphonate derivatives, useful to carry out water treatments, of general formula



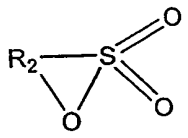
where n is between 2 and 15000; M_2 can be hydrogen or a suitable cation and each R group can be a - $CH_2PO_3M_2$ group, or linear or branched alkyl residue resulting from the reaction of the terminal amine groups with the following reagent classes:

1.



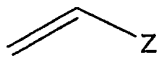
where R_1 can be H, CH_3, CH_2Cl, CH_2OH.

2.



where R_2 is an alkyl with a carbon atom number between 3 and 5,

3.



where Z is a group chosen from: $CONH_2$, CHO, COOR, COOX, where R = CH_3, C_2H_5, and where X = H, Na, K, NH_4.

2) Polyaminomethylenephosphonate derivatives according to the preceding claim wherein n is preferably between 2 and 15000, and each R group, being the same or different, is independently selected from the following classes:

1. $CH_2PO_3M_2$ where M may be hydrogen or an suitable cation such as alkali metal or ammonium;

2. CH_2R con R = CH_2OH; $CHOHCH_3$; $CHOHCH_2Cl$; $CHOHCH_2OH$

3. $(CH_2)_nSO_3M$ con n = 3÷4 where M may be hydrogen or a suitable cation such as alkali metal or ammonium;

4. CH_2CH_2R con R = $CONH_2$, CHO, $COOR_1$, COOX, CN

con R_1= CH_3÷C_2H_5

where X may be hydrogen or a suitable cation such as alkali metal or ammonium.

With the premise that at least one of substituent R always is different from $CH_2PO_3M_z$.

3) Polyaminomethylenephosphonate derivatives according to claim 2 wherein also at least on of the terminal $CH_2PO_3H_2$ mojeties are substitued by one of the mojeties under the above points 1 to 4.

4) Process for the preparation of the polyaminomethylenephosphonate derivative according to claims 1 or 2, comprising phosphonomethylation of polyamine derivatives by means of Mannich reaction.

5) Use of polyaminomethylenephosphonate derivative according to Claim 2 as scale inhibitors.

6) Use of polyaminomethylenephosphonate derivative according to Claim 2 as sequestring agents.

7) Use of polyaminomethylenephosphonate derivative according to Claim 2 as corrosion inhibitors.